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ABSTRACT

A study was conducted at Queensborough Community College (QCC) to determine whether selected academic variables associated with the way students completed their curriculum differentiated successful (graduated) from unsuccessful (probationary) open admissions students. The study investigated the effects on students' success of the early completion of a remedial reading, writing, or mathematics course; enrollment in advanced courses before the completion of 25 credits; the number of credits attempted during the first three semesters; or the interaction of these elements with each other and with curricular assignment. Data were collected on 198 students who first registered at QCC in 1978. Of these, 99 had been placed on academic probation and 99 would graduate by 1981. The study revealed: (1) the 1981 graduates had completed remedial courses on an average of at least one semester earlier than students on probation; (2) the mean difference between the two groups with respect to early enrollment in difficult courses was significant but low; (3) the mean differences between the two groups with respect to curriculum (Liberal Arts or Career) was not significant; and (4) for liberal arts students, early completion of reading remediation was correlated significantly with academic success. (HB)

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The Impact of Selected Academic Curricular Variables on Achievement and Graduation of Open Admissions Students at an Urban Community College

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Abstract

The problem studied was the high attrition and low rate of graduation plaguing open admissions students at community colleges today. Alterable academic curricular variables were examined to determine which were predictive of success (graduation) or failure (probation).

Variables implicit in Benjamin Bloom's mastery learning instructional model--sequencing of knowledge and individualized pacing--guided the selection of curricular variables: 1)sequencing of remedial and non remedial courses; 2)time spent pursuing a degree (cumulative courseload).

198 open admissions students, first enrolled in 1978 at an urban community college, formed the sample. Half had been graduated in 1981 and half were on academic probation. A hierarchical multiple regression analysis revealed that semester of remediation explained 23 percent of the variation in student outcome, significant at the .01 level. A significant but low correlation was found between semester of enrollment in difficult courses and student outcome, but did not contribute to a predictive equation. Similarly, cumulative courseload did not add to predicting success.

One major implication of this study is that open admissions students, once barred from college, can succeed, given certain conditions. Remediation, in addition, must be viewed critical to student success.

Introduction

For the first time in 30 years, post-secondary education faces declining enrollments and reductions in federal and state appropriations. For the remainder of this decade, productivity may be the central problem for education and educational research (Melmed, 1983). Preventing students from dropping out may prove to be one of the most cost effective efforts colleges can make.

It is the two year college that especially has been plagued by high rates of attrition and low rates of degree completion. Research findings reveal that only 20 percent of entering community college students complete a degree--compared to 60 percent of entering four-year students (Beal & Noel, 1980; Cope, 1978; Lavin et al., 1979). One explanation is that the community college's policies of equal access have attracted many students who lack basic skills and motivation and are unable to complete a degree program. Hence, colleges, beset by economic problems, are questioning the productivity of open admissions policies and the future of these policies seems dismal.

Despite the high rate of attrition that exists among open admissions students, many do succeed and are graduated. Lavin (1974) noted that 35 percent of open admissions students from both two and four year City University of New York (CUNY) colleges are graduated. Unfor-

tunately, educators still are unable to identify specific variables related to academic success. Research here has focused on student demographic variables (Lavin, 1974, 1979; Morton, 1980) but has neglected to examine those tractable variables that colleges can use to raise the degree completion rate of open admissions students.

Purpose of the Study

To explore this neglected ground, the present study attempted to examine the curricular process of open admissions students--the way in which the curriculum is completed--to determine whether selected academic curricular variables differentiated successful (graduated) from unsuccessful (probationary) open admissions students at an urban, public community college. Bloom's (1968) mastery learning model served as the basis for selection of curricular variables: Pre-requisite course mastery, course sequencing and individualized pacing. The purpose of this study was to determine whether such variables were predictive of academic success and could be used as a model of college curricular process.

Methodology

The Sample

The sample in this study was open admissions students first registered at Queensborough Community College, CUNY, in 1978. One-hundred and ninety-eight stu-

dents were selected from that group by using the Random Number generator. Ninety-nine students had been placed on academic probation and 99 were to be graduated by 1981. (This three year spread--1978-1981--represents the average estimated time in which students are graduated from a two-year college, Lavin, 1979.)

Research Questions

Research Question 1: Does satisfactorily completing reading, writing, and mathematics remediation in an earlier rather than later semester differentiate between succesful and unsuccessful open admissions students?

All information was obtained from college transcripts and recorded separately for reading, writing and mathematics courses. Semesters were coded 1, 2, 3, 4, for semester of completion, and 5 and 6 if completed hence.

Measurement of success was grade point average (GPA), obtained from transcripts and recorded continuously.

Research Question 2: Does enrollment in advanced and difficult courses before completion of 25 credits differentiate between successful and unsuccessful open admissions students:

"Difficulty" of selected courses was assessed by combining three scores: 1)failure rate; 2)withdrawal rate; and 3)readability level of teacher recommended textbooks. In order to guarantee that the failure and withdrawal rates were independent of teachers' habits, an average was calculated for four semesters. Grades were

obtained from college records. Readability levels were assessed by the Fry (1977) Readability Formula and were recorded continuously.

Initially, 25 courses with no basic skill prerequisite were selected in which at least 80 percent of the sample had enrolled. Three indexes of difficulty were converted into standardized z scores and compared to the general population of courses offered. An average of the three measures of difficulty was obtained, yielding a single coefficient of difficulty. Courses with z scores of at least one standard deviation above the mean on at least two of the three difficulty measures were chosen.

Research Question 3: Does the number of credits attempted during the first three semesters (cumulative courseload) differentiate between successful and unsuccessful open admissions students?

The number of credits attempted was obtained from transcripts and recorded continuously.

Research Question 4: Do timing of remediation, early enrollment in difficult courses, and cumulative courseload interact with curricular assignment in predicting success of open admissions students?

Interaction variables were generated by multiplication of appropriate variables as defined in Questions 1, 2, and 3.

Research Question 5: Is there an interaction between timing of remediation and cumulative courseload, timing

of remediation and early enrollment in difficult courses, and early enrollment in difficult courses and cumulative courseload in predicting success of open admissions students?

Interaction variables were generated as in Research Question 4.

Treatment of the Data

The frequency, percent, means and standard deviations of all variables were computed, using a one tailed t-test. Further, Pearson product-moment correlation coefficients were computed. The data were analyzed further by multiple regression analysis. For this study, the level of significance was set at a maximum level of .05.

Major Findings

A t-test indicated that the mean difference between the probationary group and the graduates with respect to semester of completion of reading, writing and mathematics remediation was at least one full semester. That is, those open admissions students who had been graduated by 1981 had completed remedial courses at least one full semester earlier than did those students on probation.

The mean difference between the two groups with respect to early enrollment in difficult courses was significant, but low.

The mean difference between the two groups with respect to curriculum choice (Liberal Arts or Career) was

not significant.

To further investigate the relationship between all variables, a Pearson product-moment correlation was computed. Reading, Writing and Mathematics remediation completion correlated .34, .32, and .35 respectively with graduation. (See Table I) When correlations were computed separately for Career and Liberal Arts students, results indicated that for Liberal Arts students, early completion of reading remediation was more critical, correlating .55 with graduation.

Multiple regression analysis revealed that the sequencing of all three remedial courses accounted for 23 percent of total variance. (See Table II)

Although enrollment in difficult courses in early semesters correlated significantly with graduation, when added to a multiple regression equation little improvement occurred. Similarly, cumulative courseload did not add to the predictive equation. Further, no interactions were found.

Conclusions

The results of the present study suggest that careful sequencing of all three college remedial courses facilitated student success and graduation. Remediation completion accounted for 23 percent of variance in student outcome. Evidently, students who master basic skills in early semesters are better prepared to master more advanced college work. Bloom's assertion that most students can

achieve when given an appropriate learning environment is upheld by these results. Remedial programs once considered to have questionable effectiveness now can be described effective when completed in a prescribed order.

Whereas sequencing of remedial courses was positively correlated to the graduation rate of open admissions students, sequencing of difficult courses was not definitively related to success. Affective data for this sample were not examined. The effects of motivation, subject interest and subject failure bear study.

The impact of cumulative courseload was found negligible. This variable was intended to operationalize Bloom's construct of individualized pacing, assuming that open admissions student would achieve more success if they carried fewer credits. This assumption demands more investigation.

Implications

The controversy surrounding the community college, its pluralistic goals and diverse population, is both philosophical and fiscal. On the one hand, many claim that schooling has no impact on achievement (Coleman, et al., 1977; Jencks et al., 1972) while others insist that all can learn given effective schooling (Bloom, 1981; Carroll, 1963; Tyler, 1979). CUNY's open admissions policy, begun in response to political pressure, personified the hope that education could remedy inequality.

This philosophical debate still wages. The results of this study support a pluralistic view of higher education and suggest that colleges serving a diverse population can facilitate student achievement. Many open admissions students in this study were graduated and it can be suggested that given certain educational arrangements, more could succeed. Any curricular model therefore, must include the mandatory completion of remedial courses in early semesters.

The question of whether or not policies of equal access are cost effective now can be addressed. If college cost effectiveness is measured by the number of its graduates, it can be said that programs that facilitate graduation are essential to the fiscal health of the college. These results demonstrate that programs of remediation facilitate academic success. Attempts to discontinue these programs are unwise and should be avoided.

Recommendations.

The study of the impact of motivation, subject interest and subject failure on the achievement and rate of graduation of open admissions students is recommended. In addition, combining the above affective variables with those in the present study is recommended in an attempt to strengthen a predictive equation.

Ethnographic studies are recommended as an alternate method of investigating problems of attrition and degree completion.

TABLE I

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS
AMONG THE VARIABLES FOR TOTAL SAMPLE
OF 198

				Semester			
	Outcome	GPA	Curr.	Read.	Writ.	Math	Cred.
GPA	-.80***						
Curr.	.01	-.07					
Read. Semester	.34***	-.38***	.04				
Writ. Semester	.32***	-.33***	.17**	.42***			
Math. Semester	.34***	-.41***	-.06	.27***	.17**		
Cred.	-.03	-.02	-.005	.008	.01	-.08	
Index	.12*	-.12*	.02	.10	.18**	.04	-.04

*p <.05
**p <.01
***p <.001

Table II

MULTIPLE REGRESSION ANALYSIS OF SEMESTER OF REMEDIATION PREDICTIVE OF STUDENT STATUS

Variable	R Square	Beta	Stand. Error	F	P
Mathematics	.147	.3096	.023	17.85	.001
Reading	.202	.1668	.029	4.45	.01
Writing	.233	.1917	.029	6.05	.05

BIBLIOGRAPHY

Beal, P., & Noel, L. Eds. What wor s in student retention. Washington, D.C.: The American College Testing Program, 1980.

Bloom, B. Learning for mastery. Evaluation Comment. 1968, 1, unpaginated.

_____ All our children learning. New York: McGraw-Hill Book Company, 1981.

Carroll, J. Model of school learning. Teachers College Record. 1963, 64, 723-733.

Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weingeld, F., and York, R. Equality of educational opportunity. Washington, D.C.: U.S. Government Printing Office, 1966.

Cope, R. Why students stay, why they leave. In L. Noel, Ed., Reducing the dropout rate, new dimensions for student services. San Francisco: Jossey-Bass, Inc., Publishers, 1978, 1-12.

Fry, E. Fry's readability graph: Clarifications, validity and extension to level 17. Journal of Reading, 1977, 21, 242-252.

Jencks, C., Smith, M., Acland, H., Bane, M., Cohen, D., Gintis, H., Heyns, B., and Michelson, S. Inequality: A reassessment of the effects of family and schooling. New York: Basic Books, 1972.

Lavin, D. Student retention and graduation at the City University of New York, September 1970 enrollees through seven semesters. New York: The City University of New York, Office of Programs and Policy Research, August, 1974.

Lavin, D., Alba, R., and Silberstein, R. Open admissions and equal access: A study of ethnic groups in the City University of New York. Harvard Educational Review, 1979, 49, 53-92.

Melmed, A. Productivity and technology in education. Educational Leadership. 1983, 40, 4-6.

Morton, E. An investigation of selected variables that differentiate between open admissions probationary and nonprobationary students. Unpublished doctoral dissertation, New York University, 1980.

Tyler, R. Educating children democratically. in Doxey A. Wilkerson, Ed. Educating all our children an imperative for democracy. Westport, Connecticut: Mediax, Inc., 1979, 2-15.

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